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A NEW LUDVIGIA FROM NEW ENGLAND¹

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OUR common *Ludvigia palustris* (L.) Ell. is apparently so familiar and variable as to merit little consideration in the field. A plant of similar habit but with small oblanceolate leaves and hypanthia tapering to base on very short peduncles, was collected by me on the shore of West Pond, Guilford, Connecticut in 1928 and again in 1930; also a submerged form of peculiar characteristics.

In 1932 a good series was collected in several localities near the coast, extending its range eastward about 60 miles—almost to Narragansett Bay—which indicates probable reward for a search in southeastern Massachusetts.

With plenty of this material Mr. C. A. Weatherby, at the Gray Herbarium, readily placed these plants in the section of which the rare or local *Ludwigiantha brevipes* Long has been considered the northern representative, separated by floral characters from *L. arcuata* (Walt.) Small which has a range along the coast from "Va. to Fla."

The name *brevipes*, however, appropriate originally, for peduncles 5–12 mm. long, loses force now compared with the more northern stabilized endemic of the Coastal Plain, or adjacent foot-hills region, of southern New England, with peduncles 1–2 mm. long and other characters correlated or definite.

Associates at West Pond include *Ludvigia sphaerocarpa* Ell., once and long known as the only station in Connecticut, *Xyris Smalliana*

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Nash, *Juncus militaris* Bigel. and others of coastal plain affinities in this region.

Long's species seems to me more appropriate as

LUDVIGIA brevipes (Long), n. comb. (*Ludwigiantha brevipes* Long in Britt. and Br. Ill. Fl. ed. 2, ii: 586 (1913)):
—Creeping, glabrous or rarely minutely recurved-puberulent on some upper parts and adjoining ovaries, branched, 1–3 dm. long; leaves many, opposite, oblong-ob lanceolate, acutish (actually rounded at very apex), tapering basally to a narrow-margined short indeterminate petiole or sessile, 1–2.5 cm. long; *flowers* solitary in the axils, 12–13 mm. broad, on more or less slender erect to spreading peduncles 5–12 mm. long; in anthesis the hypanthium turbinate, 4-angled, 4–6 mm. long, about equalling the sepals, distinctly bibracteolate at base; sepals 4–6 mm. long, ovate-lanceolate to lanceolate, acute, spreading, persistent; petals yellow, fugacious, broad-elliptic, 4–6 mm. long, equalling sepals; stamens 1.5–2.5 mm. long (anthers .75 mm. long), falling early intact; style stouter, 1–2 mm. long, not persistent, surrounded by a 4-lobed stylopodium: capsule clavate, 8–10 mm. long, distinctly exceeding the spreading calyx, upcurved in its tapering lower third.—“Moist sand, Long Beach Island, Ocean County, N. J.,” about 150 miles from the Connecticut coast.

LUDVIGIA lacustris, sp. nov., *L. brevipedis* similis, a qua differt floribus 5.5–6.5 mm. latis, pedunculis 1–2 (–2.5) mm. longis, hypanthio 2–3 mm. longo, sepalis ovatis deinde ovato-lanceolatis acutis ovarium aequantibus vel eo brevioribus 2.5–3 mm. longis 1.8–2.2 mm. latis, petalis elliptico-oblongis 1.3–2 (–3) mm. longis quam sepala brevioribus; staminibus 1.4–1.8 mm. longis (antheris .60 mm. longis), stylis 1.1–1.5 mm. longis, capsulis immaturis clavatis rectis vel vix curvatis.

Similar, differing in the *flowers* 5.5–6.5 mm. broad; peduncles 1–2 (–2.5) mm. long; hypanthium 2–3 mm. long; sepals ovate, soon ovate-lanceolate, acute, shorter than or equalling ovary, 2.5–3.0 x 1.8–2.2 mm.; petals elliptic-oblong, 1.3–2 (–3) mm. long, much shorter than sepals; stamens 1.4–1.8 mm. long (anthers .60 mm. long); styles 1.1–1.5 mm. long; capsules clavate, straight or nearly so (but not seen at full maturity).—Wet or moist open shores and in shallow water. CONNECTICUT; New Haven County; Guilford, several collections at West Pond; New London County; Old Lyme, mill-pond at Laysville, shores of stream below dam at Rogers Lake, south end of Rogers Lake in sand and in crevices of retaining wall; Lyme, north end of Rogers Lake in 1–2.5 dm. water, more robust, green, much branched basally, stems ascending with tips emerged 1–1.5 dm. and flowering freely. RHODE ISLAND: Washington County; Charlestown, in moist pure sand on long-emersed beach at Watchaug Pond, 12 Sept. 1932, Eames no. 11,498 (TYPE in Herb. Gray).

The type, like most other individuals of similar habitat, has purplish leaves but is unusual in their profusion, even imbricate with recurved

petioles, the main branches all basal and frequently curved laterally, the internodes very short, 2–6 mm. next to the flowers. The most robust plants, from Lyme, were particularly favored by warm water and a heavy stratum of decaying vegetation over sand. In these the internodes were up to 10 or finally even 18 mm. long, the flowers wide open in and mostly facing bright sunshine. After flowering the sepals and ovary grow a little longer and, unless fertilized (which is rarely, or late), become yellow, contract and drop off with sepals expanded. The very short peduncles sometimes upcurve 90° to bring the flowers of prostrate plants square to the zenith.

A form of deep water was a surprise from the first, is markedly different in habit, texture and appearance and is here named

LUDVIGIA LACUSTRIS forma **aquatilis** f. nov., submersa, erecta, simplex vel valde ramosa, 4–10 dm. alta; foliis multis membranaceis lineari-lanceolatis sessilibus subacutis 15–35 (–45) mm. longis, 2.5–6 mm. latis.

Submersed, erect, simple to much branched, 4–10 dm. tall; internodes short; leaves many, membranous, linear-lanceolate, sessile, acutish, 15–35 (–45) x 2.5–6 mm. CONNECTICUT: New Haven County; N. Branford, in Little West Pond; Guilford, West Pond, Eames no. 11,475 (TYPE in Herb. Gray): New London County; Old Lyme, in a millpond at Laysville and in Rogers Lake. RHODE ISLAND: Washington County, cast up on shore of Worden's Pond, South Kingston. Usually in deep water—sometimes 2.5 m.—sterile, sometimes in profusion as if from widely creeping rootstocks, or solitary and simple or nearly so. Easily broken in rough water and sometimes washed ashore in quantities.

Allied in habit to the preceding form is a plant long known to me in my home range, now named

LUDVIGIA PALUSTRIS (L.) Ell., f. **submersa** (Glück), n. comb. *Isnardia palustris*, f. *submersa* Glück, Syst. & Morph. Untersuchungen über Wasser und Sumpfgewächse, iii. 155 (1911). Submersed, erect or ascending, simple to much branching, 3–8 dm. tall; leaves membranous, broad-ovate, distinctly petioled, obtuse. Widely distributed in range of type. A plant from a mill-pond in Old Lyme, where locally plentiful, no. 11,507, Eames, may be cited as representative.

Usually in deep water, sterile. The coarse branched form with its larger leaves 4–5 cm. long, including petiole and to 2 cm. broad, the tapered base often more abrupt than apex. The simple or little-branched very slender form appears to be singularly solitary as a rule, in ponds with a weedy bottom and shooting far above most

other submersed plants, has much smaller pale green leaves is rather rare but occurs at all altitudes in eastern New York, Connecticut and in Winchester (Wincheck) Pond, Hopkinton, Rhode Island.

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RECENT DISCOVERIES IN THE NEWFOUNDLAND FLORA

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(Continued from page 223)

C. STYLOSA C. A. Meyer. Additional stations from HIGHLANDS OF ST. JOHN: peat on quartzite slopes, head of Deep Gulch, Doctor Hill, *Fernald, Long & Fogg*, no. 1441. BONNE BAY: peaty or turfy upper quartzite slopes (alt. 600–650 m.), Killdevil, no. 1442.

**C. SALINA* Wahlenb., var. *PSEUDOFILIPENDULA* Kükenth. BONNE BAY: alluvial islands and shores at mouth of Main River, *Fernald, Long & Fogg*, no. 1449.

In RHODORA, xxviii. 166 (1926), I recorded this variety from Newfoundland on the strength of a collection which closely matches Scandinavian material of Kükenthal's hybrid of it with *C. aquatilis*. The Main River material seems to be the pure variety.

C. CRINITA Lam. Typical *C. crinita* is not common in Newfoundland. The northernmost station on the West Coast is on BAY OF ISLANDS: mossy spruce woods and thickets, Lark Harbor, *Fernald, Long & Fogg*, no. 144.

C. LASIOCARPA Ehrh. The northernmost known Newfoundland station is on ST. JOHN BAY: wet bog back of Eddy's (or Old Man's) Cove, *Fernald, Long & Fogg*, no. 1452.

C. HOSTIANA DC., var. *LAURENTIANA* Fern. & Wieg., RHODORA, xxvi. 122 (1924). The most extensive development of the variety yet known is on BONNE BAY: dominant on gravelly shore and alluvial islands near mouth of Main River, *Fernald, Long & Fogg*, no. 1454. Accompanied by an abundant hybrid:

* × *C. xanthina*, hybr. nov. (*C. flava* × *C. Hostiana* var. *laurentiana*). × *C. xanthocarpae* Degl. (*C. flava* × *Hostiana*) similis, omnibus partibus majoribus; culmis 7–8 dm. altis supra scabris; foliis 3–4 mm. latis; spicis femineis 1.2–2 cm. longis 7–10 mm. crasiis, imis 3–11 cm. distantibus; periginiis ovatis inflatis 4–5 mm. longis longe rostratis, valde costatis.—NEWFOUNDLAND: several large clumps with the abundant parents on gravelly shores and alluvial islands near mouth of Main River, Bonne Bay, August 27, 1929, *Fernald, Long & Fogg*, no. 1455 (TYPE in Gray Herb.).

× *C. xanthina* clearly combines the characters of its parents and is quite sterile. It strongly simulates × *C. xanthocarpa* (× *C. fulva*